Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Lake Charles LNG Receiving Terminal
Trunkline LNG Company, LLC
Lake Charles, Calcasieu Parish, Louisiana
Agency Interest Number: 3351
Activity Number: PER20070001
Proposed Permit Number: 0520-00098-V7

I. APPLICANT

Company:
Trunkline LNG Company, LLC
P.O Box 4967
Houston, Texas 77210-4967

Facility:
Lake Charles LNG Receiving Terminal
8100 Big Lake Road
Lake Charles, Calcasieu Parish, Louisiana
Approximate UTM coordinates are 472.22 kilometers East and 3330.92 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

Trunkline LNG Company, LLC (Trunkline) owns and operates a liquefied natural gas (LNG) terminal, the Lake Charles LNG Receiving Terminal (Facility), in Lake Charles. The Facility currently operates under Permit No. 0520-00098-V6 issued on November 15, 2006; Prevention of Significant Deterioration (PSD) Permit No. PSD-LA-97(M-2) issued on May 27, 1987; and PSD Permit No. PSD-LA-685 issued on October 1, 2002.

The Facility currently operates under one facility-wide Part 70 permit, Permit No. 0520-00098-V6 issued on November 15, 2006.

The Facility submitted timely applications for its initial Part 70 permit and continues to operate under the state permits listed below.

Permit No.	Unit or Source	Date Issued
PSD-LA-97(M-2)	Natural Gas Turbine (E-1), Fuel Gas Heaters (E-10 and E-11), LNG Vaporizers (E-3 through E-9)	May 27, 1987
PSD-LA-685	LNG Vaporizers (E-14 through E-16)	October 1, 2002

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III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application was submitted on February 12, 2007 requesting a Part 70 operating permit major modification for the Lake Charles LNG Receiving Terminal. Supplemental information dated July 10, 2007 was also submitted. The application was subsequently revised through an Addendum dated August 6, 2007.

Process Overview and Facility Permit Background Information

The Lake Charles LNG Receiving Terminal receives liquefied natural gas (LNG) by marine vessel at its marine terminal. The LNG is transferred to four pressurized storage vessels which are not emission sources. Vapors created during the transfer operation are re-pressurized and re-injected into the LNG stream. Pumps submerged in the LNG tanks elevate the pressure of the liquid sufficiently to lift it out of the tanks and circulate it to the dock area to maintain those lines in a cold state. Second stage pumps elevate the pressure to about 1500 psig before the LNG enters the vaporizers. The facility operates fourteen (14) vaporizers (E-3 through E-9 and E-14 through E-20) to re-gasify the LNG for subsequent transmission via interstate pipeline. The current permit also authorizes the reduction in usage of these vaporizers and the installation of ambient air vaporizers.

Ancillary emission sources at the Facility include one (1) electrical generation turbine (E-1), two (2) fuel gas heaters (E-10 and E-11), one (1) WEG solution heater (E-21), two (2) 176.5 MMBtu/hr glycol heaters (E-22 and E-23), component fugitive losses (FG-1), one (1) gasoline storage tank (T-3), and three (3) diesel-powered emergency generator engines (EG-1, EG-2, and SEG). Insignificant activities authorized for this Facility are listed in Section IX of the Part 70 permit.

With the previous permit modifications (Permit Nos. 0520-00098-V4 and 0520-00098-V5), Trunkline proposed to add four (4) additional vaporizers (Emission Points E-17, E-18, E-19, and E-20); one (1) glycol solution heater (Emission Point E-21); to reclassify the existing gas-fired turbine generator (Emission Point E-1) to a standby unit with an operating schedule limited to 800 hours per year; to remove the GE Turbine (Emission Point E-12) from the permit as the plans to construct it were abandoned; and to update fugitive emissions to reflect the changes. Trunkline then proposed to add language that clarifies the fact that the existing turbine (Emission Point E-1) will be used as an emergency power source only after the startup of the Phase II emissions sources (Emission Points E-17 through E-21). The completion of the construction of a new electrical substation before the startup of the Phase II emission sources would allow the turbine to be operated as an emergency power source. The construction of the Phase II emission sources and substation was completed on August 21, 2006; the Phase II emission sources and substation are currently in operation. Therefore, the turbine is now designated as an emergency use turbine and will operate at a maximum of 800 hours per year.

With the issuance of Permit No. 0520-00098-V6, Trunkline was authorized to proceed with an additional construction project known as the Infrastructure Enhancement Project (IEP). The IEP added additional ambient air vaporizers, gas processing equipment, and two (2) glycol heaters. Other emission sources which were added as a result of the IEP were three (3) diesel-fired emergency generators (one (1) new engine plus two (2) existing engines that are no longer insignificant activities). Resulting insignificant activities included the replacement of eight (8) existing fire water pumps, the addition of a new fire water pump, and the addition of nine (9) new diesel storage tanks. Overall, with the completion of the construction of the IEP, the emissions from the Facility would be significantly reduced since the

operation of the previously permitted combustion vaporizers and turbine would be reduced. As such, Trunkline proposed to limit operations by establishing a total annual heat input CAP of 5,704,000 MM BTU/yr for LNG vaporizers E-3 through E-9 and E-14 through E-16; a total annual heat input CAP of 2,331,200 MM BTU/yr for LNG vaporizers E-17 through E-20; a total annual heat input CAP of 2,319,210 MM BTU/yr for the two glycol heaters (E-22 and E-23); and further limiting the hours of operation of the stand-by turbine (E-1) to a maximum of 200 hr/yr. Therefore, a new Phase I (current operations) and a new Phase II (operations after IEP project completion) were incorporated into this permit modification. The new Phase I consisted of the turbine (E-1) operating at 800 hr/yr and the existing vaporizers (E-3 through E-9 and E-14 through E-20) operating without an annual heat input CAP. The new Phase II consisted of the turbine (E-1) reduced to 200 hr/yr and the existing vaporizers operating with an annual heat input CAP. The limitation of the turbine operating time as well as the incorporation of the vaporizer heat input CAPs allowed the Facility to not trigger Prevention of Significant Deterioration (PSD) regulations.

Proposed Permit

Permit No. 0520-00098-V7 will be a Part 70 operating permit significant modification of Part 70 operating permit 0520-00098-V6 for the Lake Charles LNG Receiving Terminal.

In this proposed permit modification, Trunkline requested the following:

1. To redesignate the use of nine (9) diesel-fired fire water pumps from Insignificant Activites (in the current Title V permit, Permit No. 0520-00098-V6 issued on November 15, 2006) to permitted emission sources in this permit. Also, two additional diesel-fired fire water pumps will be added and permitted as emission sources.
2. To reduce the currently permitted total annual heat input CAPs for the vaporizers. Vaporizers E-3 through E-9 and E-14 through E-16 will have a total annual heat input CAP of 4,577,000 MM BTU/yr (currently permitted at 5,704,000 MM BTU/yr). Vaporizers E-17 through E-20 will have a total annual heat input CAP of 1,870,600 MM BTU/yr (currently permitted at 2,331,200 MM BTU/yr).
3. To reduce the operational run time of the turbine (E-1) from 200 hr/yr to 150 hr/yr.

Items 2 and 3 above will allow the Facility to proceed with the aforementioned project and not trigger Prevention of Significant Deterioration (PSD) regulations.

Public notice is required for this permit for the following reason:

1. Pursuant to LAC 33:III.525.A.2.f, Federally enforceable emission caps are being made more stringent to avoid the applicability of PSD regulations. This results in the permit modification being categorized as a significant/major modification.

A notice requesting public comment on the permit will be published in *The Advocate*, Baton Rouge, and in the *American Press*, Lake Charles. A copy of the public notice will be mailed to concerned citizens listed in the Office of Environmental Services Public Notice Mailing List. The draft permit will also be submitted to US EPA Region VI. All comments will be considered prior to the final permit decision.

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Permitted Air Emissions

Estimated emissions in tons per year (TPY) for the Lake Charles LNG Receiving Terminal are as follows:

POLLUTANT	CURRENT OPERATIONS (NEW PHASE I)[1]	OPERATIONS AFTER IEP COMPLETION (NEW PHASE II)	CHANGE
PM_{10}	44.04	34.54	- 9.50
SO_2	4.30	3.39	- 0.91
NO_X	333.22	234.31	- 98.91
CO	176.51	131.18	- 45.33
VOC*	33.48	28.04	- 5.44

*VOC LAC 33:III.Chapter 51 Toxic Air Pollutants (TAPs):			
POLLUTANT	**CURRENT OPERATIONS (NEW PHASE I)[1]**	**OPERATIONS AFTER IEP PROJECT COMPLETION (NEW PHASE II)**	**CHANGE**
Benzene	0.01	0.01	No change
Ethyl benzene	0.01	0.01	No change
Formaldehyde	0.94[2]	0.61[2]	- 0.33
MTBE	0.02	0.02	No change
Toluene	0.04	0.04	No change
Xylenes	0.03	0.03	No change
Total	**1.05**	**0.72**	**- 0.33**

[1] Estimated emissions vary from Permit No. 0520-00098-V6 because of the following: 1.) Estimated emissions of VOC and formaldehyde were incorrectly listed in Permit No. 0520-00098-V6; the formaldehyde emissions were not included in the Total VOC emissions. 2.) Estimated emissions include emissions from the diesel firewater pumps (FWP-1 through FWP-11) which are not listed in Permit No. 0520-00098-V6. The diesel firewater pump emissions are not incumbent upon the IEP project.

[2] Emissions are exempt from the requirements of LAC 33:III.Chapter 51 because they are combustion related (LAC 33:III.5105.B.3

IV. REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

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Applicability and Exemptions of Selected Subject Items

ID No.	Requirement	Note
UNF001 Entire Facility	LAC 33:III.Chapter 51 – Comprehensive Toxic Air Pollutant Emission Control Program	**DOES NOT APPLY.** Facility is not a major source of toxic air pollutants.
EQT003, EQT023 E-1 – Gas Turbine 2204-JA (Phases I and II, respectively)	40 CFR 60 Subpart GG - Standards of Performance for Stationary Gas Turbines [40 CFR 60.330]	**EXEMPT** from the NOx standard of 60.332(a) per 60.332(j). SO_2 standards of 60.333 still apply.
EQT004, EQT005, EQT006, EQT007, EQT010, EQT013, EQT014, EQT015, EQT016, EQT017, EQT018, EQT019 LNG Vaporizers	40 CFR 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	Fuel rate recordkeeping by electronic or hard copy monthly. Keep records of the amount of each fuel combusted during each calendar month. If fuel used has a potential sulfur dioxide emission rate of 0.32 lb/MM Btu (140 ng/J) heat input or more, keep records of the fuels combusted during each day. Subpart Dc (FERC tariff currently limits sulfur in gas to less than 20 grains/100 scf or 0.03 lb/MM Btu). [40 CFR 60.48c(g)]
EQT024, EQT025 Glycol Heaters	40 CFR 60 Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	Nitrogen oxides <= 0.10 lb/MM BTU (43 ng/J) heat input (expressed as NO_2), except as provided in 40 CFR 60.44b(k). The nitrogen oxide standards apply at all times, including periods of startup, shutdown, or malfunction. Subpart Db. [40 CFR 60.44b]
		Operate NO_x continuous monitoring systems and record data during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Record data during calibration checks, and zero and span adjustments. Subpart Db. [40 CFR 60.48b(c)]
EQT026, EQT027, EQT028 Diesel Emergency Generators	40 CFR 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR 60.4200(a)(2), (a)(3)]	**DOES NOT APPLY.** Sources were not constructed, reconstructed, or modified after July 11, 2005.

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ID No.	Requirement	Note
EQT030, EQT031, EQT032, EQT033, EQT034, EQT035, EQT036, EQT037, EQT038, EQT039, EQT040 Diesel Firewater Pumps	40 CFR 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR 60.4200(a)(2)(i)]	**DOES NOT APPLY.** This Subpart does not apply to stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005, are manufactured after April 1, 2006, and are fire pump engines.

Prevention of Significant Deterioration (PSD)

This permit modification involves construction of new sources at the facility. A PSD Netting Analysis was conducted to determine if the proposed additional and existing diesel firewater pumps at the Lake Charles LNG Receiving Terminal (Facility) require a full PSD review. As shown in the tables below, the PSD Netting Analysis indicates that PSD review is not required. However, the Facility is authorized and will continue to operate in compliance with the existing PSD permit authorizations.

Estimated emission increases of PSD pollutants from the aforementioned projects are as follows:

Project Related Increases of PSD Pollutants without Associated Decreases			
Pollutant	**Increase (TPY)**	**PSD Significance Levels (TPY)**	**PSD Netting Analysis Required**
CO	42.23	100	No
NO_x	64.76	40	**Yes**
SO_2	1.26	40	No
PM_{10}	11.86	15	No
VOC	11.21	40	No

PSD Netting Analysis for NO_x	
	NO_x TPY
Turbine E-1	- 100.82[1]
Existing Vaporizers (E-3 through E-9 and E-14 through E-16)	37.28[1]
Vaporizers Recently Constructed (E-17 through E-20)	51.74[2]
WEG Heater (E-21)	0.22[2]
Proposed Glycol Heaters (E-22 and E-23)	40.59[2]
Emergency Generators (EG-1, EG-2, SEG) and Firewater Pumps (FWP-1 through FWP-11)	9.53[2]
PSD Netting Analysis Total	**38.53**

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PSD Netting Analysis for NO_x	
	NO_x TPY
PSD Significance Level Trigger Value (TPY)	**40**
PSD Review Required (Yes/No)	**No**

[1] Emissions are past actual NO_x emissions from 2003 through 2004 minus the NO_x emissions proposed in the Infrastructure Enhancement Project

[2] Sources had no past actual NO_x emissions from 2003 through 2004. Only the proposed NO_x emissions from the Infrastructure Enhancement Project were considered.

Non-attainment New Source Review (NNSR)

The Lake Charles LNG Receiving Terminal is located in Lake Charles which is in attainment with National Ambient Air Quality Standards (NAAQS) for all regulated pollutants. Therefore, NNSR regulations do not apply.

Streamlined Equipment Leak Monitoring Program

Not applicable.

MACT Requirements

The Facility is a minor source of toxic air pollutants (TAPs) pursuant to LAC 33:III.Chapter 51. MACT is not required.

Air Quality Analysis

Not applicable.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

Not applicable.

VI. PERIODIC MONITORING

Periodic monitoring is required for certain sources in this permit. All periodic monitoring shall be conducted in accordance with state and federal regulations, as applicable. See the Facility Specific Requirements of the draft Part 70 permit or monitoring requirements.

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H_2S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_X) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: $\geq$ 10 tons per year of any toxic air pollutant; $\geq$ 25 tons of total toxic air pollutants; and $\geq$ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10} – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40

CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulfur.

Sulfuric Acid (H_2SO_4) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.